

Appl. No. 10/711,883
Amdt. dated September 28, 2006
Reply to Office action of July 11, 2006

Amendments to the Drawings:

Figures 4 and 5 have been amended to correct the numeral reference "59". The wrong numeral reference "59" has been replaced by the correct numeral reference "54" showing the spindle region. No new matter has been added through this amendment to

5 Figures 4 and 5. Acceptance of the amended figures is respectfully requested.

Attachments: Replacement Sheet 2 pages
 Annotated Sheet Showing Changes 2 pages

REMARKS/ARGUMENTS

1. Rejection of claims 1-6 under 35 U.S.C. 112:

Claims 1, 3, 5 and 6:

Claims 1, 3, 5 and 6 have been amended to overcome this rejection. Specifically, the term “photo-etching process” recited in original claims 1, 3, 5 and 6 has been amended to “etching process”. No new matter is entered by these amendments. The steps of the etching process are clearly defined in the specification, and therefore the “etching process” in claims 1, 3, 5 and 6 is not vague and indefinite. Reconsideration of claims 1, 3, 5 and 6 is requested.

10

2. Rejection of claim 1 and 3-6 under 35 U.S.C. 103(a) as being unpatentable over

Lee et al. (US 6,541,831):

Claim 1:

Claim 1 claims a method of double-side etching comprising:

15 providing a wafer comprising at least a first region and at least a second region, an area of the first region being smaller than an area of the second region, and the second region being partially overlapped with the first region;
performing a first etching process upon a first surface of the wafer to remove the wafer in the first region until a predetermined depth;

20 bonding the first surface of the wafer to a carrier; and
performing a second etching process upon a second surface of the wafer to remove a portion of the wafer in the second region not overlapped with the first region until the wafer is etched through.

25 According to claim 1, the second etching process is performed upon the second surface to remove a portion of the wafer in the second region not overlapped with the first region until the wafer is etched through.

Regarding US 6,541,831, Lee teaches a method of forming a micromirror and an actuator. Referring to Figs. 25-28 and col. 12, Lee discloses etching the substrate 170 from the back side to from the trenches 204. As shown in Fig. 25, the left and the right 5 trenches 204 does overlap with the trenches 186 formed on the front surface. However, the second etching process of claim 1 is carried out to remove the wafer in the second region **not overlapped** with the first region.

10 In addition, although the middle trench 204 of Lee does not overlap with the trenches 186, the middle trench 204 is never etched through (see Fig. 28). On the other hand, the second region not overlapped with the first region is etched through according to the method of claim 1.

15 Since Lee does not teach or suggest **etching through** the trench of the back side of the substrate **not overlapped with** the trench formed on the front side, the method of claim 1 is distinct from Lee's teaching and should be allowed. Reconsideration of claim 1 is therefore requested.

Claims 3-6:

20 Claims 3-6 are dependent on claim 1, and should be allowed if claim 1 is found allowable. Reconsideration of claims 3-6 is therefore requested.

Claim 2:

25 Claim 2 recites that the first region and the second region define a micro spindle structure. This limitation is the same as that recited in the preamble of claim 7, and this limitation has been considered patentable as recited on page 4 of the Office action. As a result, the applicant believes that claim 2 is patentable and should be allowed. Reconsideration of claim 2 is requested.

Appl. No. 10/711,883
Amdt. dated September 28, 2006
Reply to Office action of July 11, 2006

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

5 Sincerely yours,



Date: 09/28/2006

Winston Hsu, Patent Agent No. 41,526

10 P.O. BOX 506, Merrifield, VA 22116, U.S.A.

Voice Mail: 302-729-1562

Facsimile: 806-498-6673

e-mail : winstonhsu@naipo.com

15 Note: Please leave a message in my voice mail if you need to talk to me. (The time in D.C. is 12 hours behind the Taiwan time, i.e. 9 AM in D.C. = 9 PM in Taiwan.)